

Hideaki OHBA*: On the Himalayan species of the
genus *Rosularia* (Crassulaceae)

大場秀章*: ヒマラヤ産 *Rosularia* 属の分類学的研究**

Rosularia is distinguished from the genus *Sedum*, by the following characters: 1) rosulate leaves sessile, uniform, not degenerated to scaly appendages, very often hairy and/or papillate; 2) petals membranaceous, more or less connate at the base; 3) ovaries somewhat concave ventrally, often hairy; and 4) roots mostly thickened.

Rosularia was first proposed by de Candolle (1828) as a section of the genus *Umbilicus* L. Stapf (1923) regarded it as a distinct genus. Berger (1930) first published the conspectus of the genus in his synoptic revision of Crassulaceae. Since then, Borissova (1939), Jansson & Rechinger (1970), and Chamberlain & Muirhead (1972) adopted *Rosularia* in their regional revisions of Crassulaceae. On the other hand, R.-Hamet (e.g. 1929) reduced *Rosularia* into the genus *Sedum*, and, also, Fröderström (1930-35) treated it as a member of *Sedum*, in which he distributed *Rosularia*-species partly into Asiatica Orthocarya gr. Umbilicoides and partly into Eurasiatica Orthocarpia gr. Sempervivoides. Fröderström (1931), however, wrote: "Both these species [i.e. *Sedum acuminatum* (Decne.) R.-Hamet and *S. sedoides* (Decne.) R.-Hamet] should find a better place in the genus *Sempervivella* Stapf, which, in my opinion, seems to be an Asiatic transitions from *Sedum* to *Umbilicus*". *Sempervivella* is characterized by its 6-8-merous flowers with short cup-shaped corolla-tubes and spreading corolla limbs. These characters, however, are evidently common with those of *Rosularia*. Jansson (in Jansson & Rechinger, 1970) reduced *Sempervivella* to a section of *Rosularia*.

Rosularia (incl. *Sempervivella*) contains more than 25 species, and ranges from East Mediterranean to Tien Shan northwards and to West Himalayas eastwards with its present distributional center in the region from Pamir-

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Alai to Hindukush. In the present study, 5 species and 1 subspecies are recognized from the Himalayas (incl. Kabul range), i. e. *R. adenotricha* subsp. *adenotricha* and subsp. *Viguieri*, *R. alpestris*, *R. Marnieri* (comb. nov.), *R. rosulata* (comb. nov.), and *R. sedoides* (comb. nov.).

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Key to the species of *Rosularia* in Himalaya

1. Rosulate leaves sword-shaped with acuminate or acute apex.
 2. Calyx laevis, 2.4-3.7 mm long; petals mostly acuminate or acute, 5-7 × 1.7-2.2 mm in size; cauline leaves oblanceolate—oblong-spathulate (1) *R. alpestris*
 2. Calyx sparsely or densely papillate outside (the papilla 0.05-0.1 mm long), 4-4.5 mm long; petals obtuse, 7-7.7 × 3.5-3.8 mm in size; cauline leaves narrowly lanceolate—very narrowly elliptic.... (3) *R. Marnieri*
1. Rosulate leaves spathulate—obovate—spathulate-oblong with rounded or obtuse apex.
 3. Flowers 6-8-merous; petals 10-11 mm long..... (2) *R. sedoides*
 3. Flowers always 5-merous; petals less than 8 mm long.
 4. Plants stoloniferous; calyx-tubes patelliform; petals 5-5.5 mm long (5) *R. rosulata*
 4. Plants without stolons; calyx-tubes poculiform; petals 6-7.3 mm long (4) *R. adenotricha*
 5. Rosulate leaves glabrous, 8-12 × 4-5.2 mm in size; calyx-lobes 1.7-4.2 × 0.8-2 mm in size (4a) *R. adenotricha* subsp. *adenotricha*
 5. Rosulate leaves densely glandular pubescent (the hairs 0.3-0.6 mm

long), $15-32 \times 5.5-7$ mm in size; calyx-lobes $3.2-6 \times 1.8-3.6$ mm in size(4b) *R. adenotricha* subsp. *Viguieri*

Rosularia (DC.) Stapf, Curtis's Bot. Mag. 149: t. 8985, ad nota (1923)—Berger in Engl. et Prantl, Pflanzenfam. 2 Aufl. 18a: 465 (1930)—A. Boriss. in Komarov, Fl. USSR 9: 114 (1939)—D. A. Webb in Tutin et al., Fl. Europ. 1: 364 (1964)—Jansson et Rechinger in Rechinger, Fl. Iran. 72: 21 (1970)—Chamberlain et Muirhead in Davis, Fl. Turk. 4: 214 (1972).

Umbilicus sect. *Rosularia* DC., Prodr. 3: 399 (1828). Lectotype: *Umbilicus sempervivum* (M.-Bieb.) DC. (= *Rosularia sempervivum* (M.-Bieb.) Berg.).

Sempervivella Stapf, Curtis's Bot. Mag. 149: t. 8985 (1923). Lectotype: *Sempervivella alba* (Edgew.) Stapf. (= *Rosularia sedoides* (Decne.) H. Ohba).

(1) **Rosularia** (Sect. *Sempervivella*) **alpestris** (Kar. et Kir.) A. Boriss. in Komarov, Fl. USSR 9: 129 (1939) et in Ovchinnikov, Fl. Tadzhik. 4: 257 (1975)—Jansson et Rechinger in Rechinger, Fl. Iran. 72: 26 (1970).

Umbilicus alpestris Kar. et Kir. in Bull. Soc. Nat. Mosc. 15: 354 (1842)—Regel et Herd., Enum. Pl. Semenov. 109 (1864).

Sempervivum acuminatum Decne. in Jacq., Voy. Bot. t. 74 f. 1 (1844)—Hook. f. et Thoms. in Journ. Linn. Soc. 2: 92 (1858)—C.B. Clarke in Hook. f., Fl. Brit. Ind. 2: 422 (1878)—Boiss., Fl. Orient. Suppl. 247 (1888)—Hemsley in Journ. Linn. Soc. 35: 178 (1902).

Sempervivum mucronatum Edgew. in Trans. Linn. Soc. 20: 49 (1846)—Hook. f. et Thoms. in Journ. Linn. Soc. 2: 92 (1858).

Sedum Mocroftianum Wall. [Cat. no. 7228 (1832), nom. nud.—Royle, Ill. Bot. Himal. 222 (1835), nom. nud.] ex Edgew. in Trans. Linn. Soc. 20: 49 (1846), nom. illegit.

Sempervivum himalayense Klotzsch, Bot. Ergeb. Reise Prinz. Waldem. 145, T. 43 B (1862), syn. nov.

Sedum umbilicoides Regel in Act. Hort. Petrop. 5: 263 (1877) et in Gartenfl. 26: 290 (1877)—Fröd. in Act. Hort. Gothob. 6: append. 29 (1931).

Sedum Olgae Regel et Schmalh. ex Regel, Descr. Pl. Nov. Fedtsch. 26 (1882)—Fröd. in Act. Hort. Gothob. 6: append. 30 (1931).

Cotyledon alpestris (Kar. et Kir.) O. et B. Fedtsch., Consp. Fl. Turkest. 3: 73 (1909).

Sedum Durisii R.-Hamet in Bull. Soc. Bot. France 60: 447 (1913)—Berger

in Engl. et Prantl, Pflanzenfam. 2 Aufl. 18a: 443 (1930)—Fröd. in Act. Hort. Gothob. 6: append. 30, f. 207-214, Pl. 17 (1931), syn. nov.

Sedum acuminatum (Decne.) R.-Hamet in Candollea 4: 21 (1929).

Sempervivella acuminata (Decne.) Berger in Engl. et Prantl, Pflanzenfam. 2 Aufl. 18a: 467 (1930)—Kitamura, Fl. Pl. West. Pakistan 78 (1964) et Addit. Correct. Fl. Afghan. 99 (1966).

Sempervivella mucronata (Edgew.) Berger in Engl. et Prantl, Pflanzenfam. 2 Aufl. 18a: 467 (1930)—Wendelbo in Nytt. Mag. Bot. 1: 35 (1952)—Kitamura, Fl. Afghan. 169 (1960).

Sedum Schlagintweitii Fröd. in Act. Hort. Gothob. 6: append. 28 (1931).

Sedum nuristanicum Kitamura in Act. Phytotax. Geobot. 17: 138 (1958) et Fl. Afghan. 169, Fig. 57 (1960), syn. nov.

Sempervivella mucronata (Edgew.) Berger var. *glabra* Kitamura, Fl. Afghan. 170, ut '*glabrum*'; Fig. 57 upper, ut "*Sempervivum mucronatum* var. *glabrum* Kitam." (1960), syn. nov.

Rhodiola Durisii (R.-Hamet) Fu in Act. Phytotax. Sin. Addit. 1: 118 (1965).

Rhodiola nuristanica (Kitamura) Jacobsen, Sukkulent. Lex. 289 (1970).

Sedum garwalicum Fröd. in Ark. Bot. 30A(9): 6 (1943), versim.

[Revised description] A rosulate herb, up to 12 cm high in flowering. Rhizomes obconical, solid, 8-15(-20)mm thick, up to 2 cm long, conspicuously marked by scars of radical leaves in well developed state, the base tapering to the root. Roots fleshy, more or less thickening, 4-8 mm across in the broadest part. Rosettes not flattening, (1.5-)2-5 cm wide, consisted of 20-40 close-set leaves. Rosulate leaves sessile, gladiate—oblong—oblong-lanceolate, acuminate-acute—acute (—obtuse) at the apex, entire along the margin, 1.5-2.5(-2.7)cm long, 3-6 mm wide at the base, somewhat fleshy, flat, glabrous, nearly laevis to moderately papillate on both surfaces and the margin (the papilla 0.1-0.2 mm long, sparse towards the leaf-base), the costa not prominent, lateral veins (invisible from the surface) 3-6 on each costa, diverging, not reached the margin. Flowering stem axillary, deciduous, 1-3, simple, 5-8(-12)cm long, 0.8-1.2 mm thick, remotely leaved, erect or ascending throughout, nearly terete, moderately papillate or laevis, green throughout but often pinkish in the upper part. Cauline leaves alternate, sessile, slightly spurred (the spur about 0.5 mm long) to spurless, more or less fleshy, flat,

oblanceolate—narrowly obovate—oblong-spathulate, round—obtuse—acuminate at the apex, attenuate at the base, 5–12 mm long, (1.5–)2–3.5(–4) mm wide, green throughout but partly often reddish, densely papillate on both surfaces and the margin (the papilla 0.1–0.2 mm long), the costa not prominent. Inflorescences terminal, cyme, sparsely bracteate, (2–)3–10(–20)-flowered; peduncles and pedicels 3–5 mm long, densely papillate; bracts narrowly oblanceolate—linear-oblanceolate, acute—obtuse at the apex, 0.8–1.2 mm long, 0.5–0.8 mm wide, densely to moderately papillate on both surfaces and the margin (the papilla about 0.1 mm long). Flowers July to September, hermaphrodite, (5–)6–7-merous, 7–8 mm wide at anthesis. Calyx 2.4–3.7 mm long, more or less fleshy, green but often reddish, glabrous, nearly laevis, the tube 0.5–1.3 mm long; the lobes 2.2–2.4 mm long 0.7–1.1 mm wide, triangular-ovate—ovate—lanceolate, acuminate—acute at the apex (often with very minute mucro), entire along the margin, round outside, flat inside. Petals membranaceous, white, 5–7 mm long, 1.7–2.2 mm wide, 2–3 times as long as the calyx-lobes, connate 0.5–2 mm from the base; the distinct part narrowly ovate—lanceolate—oblong-spathulate—narrowly oblong, acuminate—acute(—obtuse) at the apex (often with very minute mucro), entire along the margin, shallowly boat-shaped, glabrous, under a lens ($\times 40$) very minutely mamillate inside (the mamilla about 0.05 mm long), ascending at anthesis, the costa rather conspicuous. Stamens slightly shorter than the petal, ascending at anthesis; filaments linear-subulate, obcompressed, white, glabrous, laevis, the oppositipetalous ones inserted 0.7–1.2 mm from the base, 3.2–4 mm long, the alternipetalous ones inserted 0.1–1 mm from the base, 3.5–5 mm long; anthers basifixed, oblong, very slightly apiculate—obtuse at the apex, about 1 mm long, (?) yellow throughout anthesis. Nectar-scales flattish, nearly square—broadly oblong, 0.5–0.6 mm long, 0.4–0.7 mm wide, often emarginate at the apex, (?) yellow. Gynoecium usually 4.5–6 mm long, slightly shorter than the petal, connate 0.8–1.8 mm ventrally from the base, the ovary 3.5–4.5 mm long, broadest near the middle, dorsally nearly straight, ventrally in the upper most part abruptly outcurved, sparsely papillate throughout (the papilla 0.1–0.3 mm long, often much more conspicuous on the upper ventral side); the style distinct, straight—outcurved, slender, 0.8–1.5 mm long, about 0.2 mm across near the base; the stigma very minutely papillate—nearly epapillate; the placenta nearly marginal. Ovules 10–18 in

each locule, mostly descending, narrowly oblong, about 0.6 mm long, the funicles less than 0.1 mm long.

Specimens examined. Afghanistan. Nuristan, Shabul Gul (S. Kitamura on Aug. 6, 1955, KYO-Holotype of *Sedum nuristanicum* Kitamura). Pakistan. Chitral, Rosh Gol, N.E. of Tirich Mir, alt. 10500 ft. On stony ground (Stainton 2800, T1). Punjab. Koksir Lahul, alt. 10000 ft. (Cooper 5189, P). N.W. Himalaya. Pangee (Stoliczka s.n., CAL). Kumaon. Tehri Garhwal, Ganges Valley (Duthie 866, CAL); Tehri Garhwal, Gaumukh, alt. 3922 m (Naithni 37401, T1). China. Sinkiang (Chinese Turkestan), Zumuthagh (Mission Pelliot-Vaillant 370, P-Holotype of *Sedum Durisii* R.-Hamet).

Distr. Central Asia (Tien Shan, Ala Tau, Alai) and Western Himalaya (N.E. Afghanistan, N. Pakistan, Kashmir, Punjab, and Kumaon).

Sedum Durisii R.-Hamet was described based on a collection by Mission Pelliot-Vaillant in 1907 from Central Asia, and considered to be related with *S. kokanicum* Regel et Schmalh. ex Regel, *S. Olgaë* Regel et Schmalh. ex Regel, *S. umbilicoides* Regel and *S. Balfouri* R.-Hamet. Fröderström (1931) placed *S. Durisii* in the Umbilicoides group of *Sedum* (sect.) Asiatica genuina Orthocarpia, while Berger (1930) interpreted it as a member of § Brevicaulia of *Sedum* sect. Rhodiola subsect. Primuloidea. Later Fu (1965) removed it into the genus *Rhodiola*. The type specimen of *S. Durisii* (P) has dense, uniform rosette-leaves which are sessile and papillate (the papilla 0.1-0.2 mm long, dense but gradually sparse towards the leaf-base); membranaceous petals which are apparently connate 0.5-0.9 mm from the base; and ventrally concaved ovaries with hairs consisted of (2-)3-6 cells. These characters clearly show that this species should be placed in the genus *Rosularia*. From the species among, *Rhodiola* (Ohba, 1975) *S. Durisii* greatly differs in radical leaves, texture and degree of connection of petals, and hairy ovaries. In his treatment of *Sedum* sect. Rhodiola subsect. Primuloidea, Berger (1930) obviously disregarded the significance of scaly leaves. *S. Durisii* has strong affinity to *Rosularia alpestris* (s. str.) distributed in Central Asia and Western Himalaya, but differs from the latter only by possession of 5 (against 6-8)-merous flowers. In *Rosularia* the number of the parts of each whorl of flowers has been regarded as considerably constant; there has been a recognizable gap between 5-merous flowers and 6- or more-merous ones. When Stapf (1923) established the genus *Sempervivella*, he considered *Rosularia*

(s. str.) to have 5-merous flowers against 6-8-merous ones of *Sempervivella*. Jansson and Rechinger (1970) also regarded the numerical difference between 5 and 6 or more in floral parts as important for taxonomic character. However, there are some species with 5-6(-7)-merous flowers; *R. Schischkinii* A. Boriss. has 5-7-merous flowers, and *R. lutea* A. Boriss. and *R. turkestanica* (Regel et Wiokl.) Berger have 5-6-merous ones. For specific discrimination between *R. alpestris* and *S. Durisii*, this difference, therefore, seems to be indecisive.

As Jansson and Rechinger (1970) pointed out, *Sedum nuristanicum* Kitamura is closely related with *Rosularia alpestris*. After re-examining the type specimen of the former species, I could not find any differences between them except for the 5-merous flowers of the former species.

(2) **Rosularia** (sect. *Sempervivella*) **sedoides** (Decne.) H. Ohba, comb. nov.

Sempervivum sedoides Decne. in Jacq., Voy. Bot. 63, T. 74 f. 2 (1844)—Hook. f. et Thoms. in Journ. Linn. Soc. 2: 93 (1858)—C.B. Clarke in Hook. f., Fl. Brit. Ind. 2: 423 (1878).

Sempervivum album Edgew. in Trans. Linn. Soc. 20: 49 (1846)—Hook. f. et Thoms. in Journ. Linn. Soc. 2: 93 (1858).

Sempervivella alba (Edgew.) Stapf in Curtis's Bot. Mag. 149: t. 8985 (1923)—Berger in Engl. et Prantl, Pflanzenfam. 2 Aufl. 18a: 467 (1930).

Sempervivella sedoides (Decne.) Stapf in Curtis's Bot. Mag. 149: t. 8985 (1923), in adnot.—Berger in Engl. et Prantl, Pflanzenfam. 2 Aufl. 18a: 467 (1930).

Sedum sedoides (Decne.) Pau in Bol. Soc. Esp. Hist. Nat. 21: 277 (1921)—R.-Hamet in Candollea 4: 47 (1929).

Sedum confertissimum Falconer ex R.-Hamet in Candollea 4: 47 (1929), pro syn.

Sedum Jacquemontii Fröd. in Act. Hort. Gothob. 7: append. 12 (1932), nom. illegit.

Specimens examined. N.W. Himalaya. Simla alt. 7000 ft. (Gamble 6496 B & F, CAL).

Distr. Western Himalaya (Kashmir, Kumaon, and Garhwal).

(3) **Rosularia** (sect. *Sempervivella*) **Marnieri** (R.-Hamet ex H. Ohba) H. Ohba, comb. nov.

Sedum Marnieri R.-Hamet ex H. Ohba in Journ. Jap. Bot. 49: 260 (1974).
Distr. Western Himalaya (W. and C. Nepal).

Although this species was previously placed in *Sedum primuloides*-group in the literature cited above, it is strongly related with *Rosularia alpestris* (Kar. et Kir.) A. Boriss., but differs from the latter by having papillate calyces, obtuse petals, narrower cauline leaves, and much shorter papillae. *R. Marnieri* differs clearly from *R. sedoides* (Decne.) H. Ohba in having sword-shaped basal leaves (against obovate with rounded apex in *R. sedoides*); 5-7 (against 6-7)-merous flowers; calyx-lobes with acute (against obtuse) apex; petals 7-7.7 (against 10-11)mm long; nectar scales nearly rectangular (against spatulate) with emarginate (against rounded) apex; and ventrally papillate (against pubescent) ovaries.

(4) ***Rosularia*** (sect. Orientalia) ***adenotricha*** (Wall. ex Edgew.) Jansson in Jansson et Rechinger in Rechinger, Fl. Iran. 72: 29 (1970).

(4a) Subsp. ***adenotricha***

Sedum adenotrichum Wall. [Cat. no. 7231 (1832), nom. nud] ex Edgew. in Trans. Linn. Soc. 20: 48 (1846)—Hook. f. et Thoms. in Journ. Linn. Soc. 2: 101 (1858), pro parte (excl. var. β .)—C.B. Clarke in Hook. f., Fl. Brit. Ind. 2: 420 (1878)—Aitch. in Journ. Linn. Soc. 18: 162 (1880)—Boiss., Fl. Orient. Suppl. 246 (1888)—Collett, Fl. Siml. 186, fig. 54 (1902)—Praeger in Journ. Roy. Hort. Soc. 46: 163 (1921)—R.-Hamet in Candollea 4: 3 (1929), excl. var. *Viguieri* R.-Hamet—Berger in Engl. et Prantl, Pflanzenfam. 2 Aufl. 18a: 451 (1930), in sect. *Seda genuina* § *Alsinefolia* Berger—Fröd. in Act. Hort. Gothob. 6: append. 26, fig. 180-188, Pl. 12 & 13 (1931); in Arkiv Bot. 30A(9): 6 (1943)—Wendelbo in Nytt Mag. Bot. 1: 35 (1952)—Kitamura, Fl. Afghan. 167 (1960); Addit. Correct. Fl. Afghan. 99 (1966).

Cotyledon tenuicaulis Aitch. et Hemsl. in Journ. Linn. Soc. 18: 57 (1880) et 19: Tab. 10, fig. 1 (1882).

Cotyledon papillosa Aitch. et Hemsl. in Journ. Linn. Soc. 18: 58 (1880).

Umbilicus tenuicaulis (Aitch. et Hemsl.) Boiss., Fl. Orient. Suppl. 244 (1888).

Umbilicus papillosus (Aitch. et Hemsl.) Boiss., Fl. Orient. Suppl. 244 (1888).

Sedum anoicum Praeger in Journ. Bot. 57: 52 (1919).

Sedum talichiense Werdermann in Notizbl. Bot. Gart. Berlin 14: 351 (1939),

versim.

Sedum cuneatum Wall. ex R.-Hamet in Candollea 4: 3 (1929), pro syn.

Specimens examined. W. Himalaya (Griffith 2456, CAL). N. W. Himalaya. Regio temp., alt. 5-8000 ped. (Thomson s. n., CAL); below Kathyan, alt. 6-7000 ft. (Duthie 12986, CAL). Pakistan. Kurrum Valley (Aitchison 243, CAL—Isotype of *Cotyledon papillosa* Aitch. et Hemsl.); Hazara, alt. 2-3500 m (Stewart 144, CAL); Abbotabad-Havelian (Monsi s. n., TI); Abbotabad, alt. 1500 m (Monsi s. n., TI); Chitral, Shishi Gol, E. of Drosh, alt. 5500 ft. On rock ledges. Petals & filament white (Stainton 2383, TI). N. W. India (Royle s. n., CAL). Kashmir. Valley of Kashmir (Winterbottom 25, CAL); Srinagar-Sonamarg (Kurosawa 179, TI); Chamba (Herb. Kurz 4338, CAL). Kumaon (Wallich 7231A, CAL—Type collection of *Sedum adenotrichum* Wall. ex Edgew.); Simla, alt. 6000 ft. (Barw. s. n., CAL); Dehra Dun, Munda, alt. 7000 ft. (Kirat Ram 208, CAL). Nepal. Odan, near Dillikot, alt. 7500 ft. Crevices of rock (Polunin, Sykes & Williams 3936, BM, TI).

Distr. Western Himalaya (E. Afghanistan, N. W. Pakistan, Kashmir, Kumaon, and Nepal).

(4b) Subsp. **Viguieri** (R.-Hamet) Jansson in Jansson et Rechinger in Rechinger, Fl. Iran. 72: 30 (1970).

Sedum adenotrichum Wall. ex Edgew. var. *Viguieri* R.-Hamet in Candollea 4: 3 (1929).

Sedum Viguieri (R.-Hamet) Fröd. in Act. Hort. Gothob. 6: append. 27, fig. 189-198, Pl. 14: 1 (1931).

Specimens examined. Pakistan. Chitral, Ashreth (S. A. Harris 16154, CAL—Holotype of *Sedum adenotrichum* var. *Viguieri* R.-Hamet); Mastuj Track, Kaghosi, alt. 5000 ft. On rock ledges (Stainton 2406, TI); Baluchistan, Ziarat, alt. 8000 ft. (Lace 3873, CAL).

Distr. Western Himalaya (E. Afghanistan and N. W. Pakistan).

(5) **Rosularia** (sect. Orientalia) **rosulata** (Edgew.) H. Ohba, comb. nov.

Sedum rosulatum Edgew. in Trans. Linn. Soc. 20: 48 (1846)—Hook. f. et Thoms. in Journ. Linn. Soc. 2: 101 (1858)—C. B. Clarke in Hook. f., Fl. Brit. Ind. 2: 420 (1878)—Aitch. in Journ. Linn. Soc. 18: 58 (1880)—Boiss., Fl. Orient. Suppl. 246 (1888)—Collett, Fl. Siml. 185 (1902)—Berger in Engl. et Prantl, Pflanzenfam. 2 Aufl. 18a: 451 (1930), in *Seda genuina* § *Alsinefolia*—Fröd. in Act. Hort. Gothob. 6: append. 25, fig. 173-179, Pl. 12: 1-2 (1931),

pro parte, excl. '*S. Griffithii* C.B. Clarke' in syn.; in Arkiv Bot. 30A (9): 6 (1943), pro parte, excl. specim. ex Bhutan-Kitamura, Fl. Afghan. 169 (1960)—Rao in Rec. Bot. Sur. Ind. 18(2): 30 (1961).

Umbilicus radicans Klotz., Bot. Ergeb. Reise Prinz. Waldem. 143 (1862).

Sedum pyriforme Royle ex Hook. f. et Thoms. in Journ. Linn. Soc. 2: 101 (1858), pro syn.

[Revised description] Perennial herb with long and slender stolons. Stolons arising from the axils of the former year's rosulate leaves, 1-5, up to 5 cm long, 0.8 mm wide, entirely glabrous and laevis, bearing a loose rosette at the apex. The rosette 1.5-1.8 cm across, consisted of 6-10 leaves, widely spreading. Rosulate leaves spatulate with petiole-like base, spurless, round at the apex, entire along the margin, fleshy, flat, green, glabrous and laevis on both surfaces, very lowly mamillate along the margin (the mamilla less than 0.05 mm long), 6-18(-21) mm long, 2-8(-10) mm wide, the costa not prominent, the veins (invisible from the surfaces) not reached to the margin. Flowering stems axillary, arising from the same and rarely former year's rosulate leaves, terete, sparsely leaved only in the lower part, densely glandular-pubescent (the hairs multicellular, usually consisted of 3-7-cells, (0.3-)0.4-0.8 mm long, except the apical cell pellucid, the apical cell globose, somewhat yellowish). Leaves on the flowering stem oblanceolate—narrowly oblanceolate—linear-oblanceolate—linear, round at the apex, shortly attenuate at the base, spurless, entire along the margin, somewhat fleshy, flat, densely glandular-pubescent throughout (the hairs very similar those on the flowering stem but much shorter, 0.2-0.3-0.4 mm long), the costa not prominent. Inflorescences terminated in each flowering stem, loosely cymose, (1-)3-5(-7)-flowered, bracteate sparsely; peduncles and pedicels 0.3-1.5(-3) cm long, densely glandular-pubescent (the hairs 0.2-0.4 mm long); bracts (oblanceolate-) narrowly oblanceolate-linear, 1.2-2 mm long 0.5-0.8 mm wide, round or obtuse at the apex, short-attenuate at the base, spurless, the margin often reflexed, densely glandular-pubescent (the hairs as the same as those of cauline leaves). Flowers hermaphrodite, May, mostly 5-merous, 4-6 mm long 5-10 mm wide at anthesis. Calyx 1.5-2.5(-3) mm long, patelliform, fleshy, green, densely glandular-pubescent outside (the hairs multicellular, composed of 5-7-cells, pellucid, 0.3-0.4 mm long; the apical cell globose, somewhat yellowish); the tube usually 0.3 mm long, broadly campanulate; the lobes narrowly

ovate—very ovate, obtuse at the apex, entire along the margin, 1.2-2.0(-2.2) mm long 1-1.3 mm wide, ascending at anthesis, somewhat rounded outside, flattish inside, the sinus between lobes round or obtuse. Petals white, slightly connate (about 0.3 mm) at the base, very narrowly ovate—narrowly oblong-ovate, acute at the apex, entire along the margin, 5.0-5.5 mm long 1.5-1.7 mm wide, membranaceous, glabrous but at the part along the costa and near the apex on the under surface sparsely glandular-pubescent (the hairs ca. 0.3 mm long), under a lens ($\times 50$) densely tuberculate (the tubercle about 0.05 mm long), ascending or nearly erect at anthesis, in the upper $3/4$ part shallowly boat-shaped. Stamens usually 10, shorter than the petal (equalling the $3/4$ - $3/5$ of the petal), erect at anthesis; filaments linear-subulate, more or less fleshy, glabrous, laevis, about 0.4 mm wide at the base; the oppositipetalous ones inserted about 1 mm from the base, 2.2-2.7 mm long, the alternipetalous ones adnate the connate part of petals, 3.4-3.6 mm long; anthers basifixed, ovate, about 0.5 mm long 0.3 mm wide, round or slightly retuse at the apex, yellow throughout anthesis. Nectar-scales narrowly oblong lorate, usually retuse at the apex, flattish, 0.7-0.9 mm long 0.2-0.3 mm wide. Gynoecium 3.6-4.5 mm long, sessile, connate ventrally 0.5 mm from the base, erect; the ovary straight, ventrally very sparsely glandular-pubescent (the hairs about 0.3 mm long), 0.8-1.1 mm wide; the style distinct, 0.7-1.0 mm long, nearly erect, usually glabrous, the stigma lowly mamillate, yellow; the placenta nearly marginal. Ovules 12-16 in each locule, ellipsoidal, about 0.5 mm long, the funicules very short (less than 0.1 mm long).

Specimens examined. Sine loc. (Wallich in 1833, CAL). Himal. bor. occ., regio. temp. alt. 4-7000 ped. (Thomson s.n., CAL). Kumaon. Simla (Mittre & Nair s.n., TI); Simla-Narkanda (Kurosawa 8, TI). Nepal. Phuca, alt. 9500 ft. Growing in rock crevices. Leaves fleshy. Stem pink, hairy. Sepals green. Petals white. Filaments, anthers and ovary white (Polunin, Sykes & Williams 4158, BM, TNS).

Distr. Western Himalaya (E. Afghanistan, Kashmir, Punjab, Kumaon, and Nepal).

[Species dubia]

Sedum Balfouri R.-Hamet [in Not. Bot. Gard. Edinb. 8: 116 (1912)] from Tibet seems to be referable to *Rosularia*. But I refrain from making

a new combination before examining the authentic material.

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Rosularia 属は東部地中海から天山山脈ならびに西部ヒマラヤにかけて分布するベンケイソウ科マンネングサ亜科 (Sedoideae) の一属で約25種が知られている。はじめ de Candolle (1828) によって *Umbilicus* 属の節として発表され、後に Stapf (1923) により属に昇格せられた。Engler と Prantl の Die natürlichen Pflanzenfamilien 改訂版で Berger (1930) によってマンネングサ亜科への帰属が明らかにされ、また最初の属全体の概観も行われた。さらに Borissova (1939), Jansson と Rechinger (1970), Chamberlain と Muirhead (1972) などによってソ連、イラン、イラク、アフガニスタン、トルコ産の種類についてそれぞれ別個に詳しい検討が行われた。*Rosularia* 属は 1) 無柄の根生葉をもつこと、2) 花弁は膜質で多少とも基部で合着すること、3) 子房は腹側でやや窪み、しばしば毛を生じること、4) 根が肥厚することなどによって最も近縁なマンネングサ属 (*Sedum*) から区別される。ただし比較対象のマンネングサ属を最広義に認める立場に立てば Fröderström (1930-35) や R. Hamet (1929) のように *Rosularia* 属もマンネングサ属に帰属するという見解も生じてくる。この問題の論評は *Rosularia* 属だけでなくマンネングサ亜科の分類全体にかかわることでもあり、本論の主旨ではないので詳細は別の論文にゆずりたい。

ヒマラヤ産の種類については従来マンネングサ属のほかに *Sempervivum*, *Umbili-*

cus, さらに *Cotyledon* 属として扱われ, 例えば, Hooker の *Flora of British India* では Clarke (1878) によって 2 種が *Sempervivum*, 2 種がマンネングサ属に分類されている。腊葉標本を主にヒマラヤ産 *Rosularia* 属を検討した結果欧文欄に記したように 5 種 1 亜種あることが判った。従来 *Sedum adenotrichum* および *S. rosulatum* としてよく知られていた 2 種は *Rosularia* 属のなかでも最もマンネングサ属 (狭義) に近い growth form をもっている。さらに花の員数のうえでも大部分のマンネングサ属のもののように両種ともほぼ例外なく 5 数性である。しかし一部を除く体全体に生じる腺状毛, 基部で合着する膜質の花卉, 腹側に腺状毛を有する子房などの形質は明らかにこれらの種類が *Rosularia* 属のものであることを示していると考え。先に発表した *Sedum Marnieri* R.-Hamet ex H. Ohba は変異の幅ひろい *Rosularia alpestris* に最も類縁に近いことが判った。北村博士の *Sedum nuristanicum*, また Berger (1930) や伝書遐 (1965) によってイワベンケイ属 (*Rhodiola*) のものと考えられた *Sedum Durisii* R.-Hamet もタイプ標本を調べた結果 *Rosularia alpestris* と同種であることが判った。イワベンケイ属のうち *Rhodiola* (= *Sedum*) *primuloides* (Franch.) Fu のように根生葉を生じる種類と *Rosularia* 属のものはしばしば混同されることもあるが, りん片葉の有無によって明らかに区別されるだけでなく, 根生葉の形態も異っている (Ohba, 未発表)。 *Rosularia sedoides* は *Sempervivella* 属のタイプとなる *Sempervivella alba* (Edgew.) Stapf と同種である。 *Sempervivella* 属はすでに Jansson (Jansson & Rechinger, 1970) によって *Rosularia* 属の一節とみなされている。チベット産の *Sedum Balfourii* R.-Hamet も *Rosularia* 属に帰属すべき種類と思われるが手元に標本がなく論評はひかえた。

OPansy の通俗英語名 (久内清孝) Kiyotaka HISAUCHI: Colloquial names of Pansy

Pansy の名で知られているサンシキスミレの英語名として, Heart's ease が一般に用いられていることはいうまでもないが, この他にいろいろの俗名が知られている。それは拾うと十指で数えるほどである。これをいちいち拾ったら大変だが, その中に Love in idleness という珍名がある。これは Shakespeare の真夏の夜の夢 (*A midsummer-night's dream*) 第 2 幕第 1 場で Oberon と Puck との間答のなかに Maidens call it love in idleness とあるのがそれで, これが日本訳には「つれづれの恋」と訳してあるが, 註釈のところには, 三色スミレのことだということわってある通りで, あちらの植物の本には昔も今もそのようになっていて, いつも真夏の夜の夢が引合に出てくる。このことは明治の終りから大正にかけて, シェークスピアものが翻訳された頃は, はっきりしていたが, 今日ではなんのことかと思われる現代人も多少あるらしいから記しておく。

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